REMARKS

Applicant notes with appreciation the indication of allowability of claims 2-8 and 11.

Claim Rejections - 35 USC 102

Claims 1, 9 and 10 have been rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's prior United States Patent 5,659,312 (Sunter et al.). Applicant respectfully submits that Sunter et al. fails the well established test for anticipation. Sunter et al. is concerned with a different problem from that of the present invention. Further, the method disclosed by Sunter et al. is not the method disclosed in the subject application and claimed in claims 1, 9 and 10 and does not solve the problem Applicant seeks to solve in the present application.

The Examiner is reminded of the test for anticipation as outlined at MPEP 2131:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). (emphasis added)

The Present Invention

The present invention seeks to provide a method of measuring signal parameters of high speed data signals to determine whether integrated circuits which generate these signals pass or fail and a method which does not require a tester to operate at the high data rates being tested. Because of the difficulty of measuring parameters of such signals, the conventional method of testing circuits which

transmit or receive high frequency signals only confirms that a signal is being transmitted or received. This test is inadequate because a circuit may be defective even though the circuit may "pass" the test (see Paragraph [0006] of Applicant's specification.)

The present invention provides a simple and elegant solution to this difficult problem. The method involves generating data signals using predetermined data sequences, measuring the average voltage of each data signal, and then deducing parameters of interest from the measured average voltages. These method steps are reflected in claim 1. Unlike the prior art and as explained in detail in Applicant's specification, the method not only allows parametric testing of high frequency signals, it is able to do so using only low frequency digital and analog test circuitry, and, therefore, it does not require a tester to operate at the high data rates being tested.

Sunter et al. United States Patent 5,659,312

Sunter et al. is not concerned with problems associated with measuring parameters of high frequency signals and neither teaches nor even remotely suggests a solution to this problem, let alone the solution set forth in the claims under consideration. Sunter et al. is concerned with problems associated with testing digital-to-analog converters (DAC) and analog-to-digital converters (ADC). The method employed by Sunter et al. is generally described in col. 4, lines 9-17 as follows:

> "To test this circuit the connections are changed, as described in detail below, to be those shown in FIG. 2. Here the digital test input signals are applied to the input lines 1, 2, 3, . . . , N to the DAC 20, the output terminal of which is connected, via the analog signal line 28, to the input terminal of ADC 14, which outputs the digital test output signals. Hence a test pattern which is a sequence of test vectors is applied as a digital test input signal to DAC 20 and the digital test output signals are output from ADC 14".

Sunter et al. applies digital test stimuli and extracts digital data which is used to calculate specific properties of signals. The digital test output signals are used to compute the various parameters disclosed.

There is no mention or teaching anywhere in the patent of "measuring the average voltage" of each data signal generated "using predetermined data sequences", as required in claim 1 of the present application. Indeed, neither the word "voltage" nor the words "average voltage" appear in the Sunter et al. specification. Clearly, the patent cannot satisfy the test for anticipation.

The Examiner relies on the teachings at col. 8, lines 30-42 and col 10, lines 12-13 of Sunter et al. to anticipate the step of "measuring the average voltage of each of the data signals" clause of claim 1 herein. Col. 8, lines 30-42 read as follows:

> "For DNL however, one need only accumulate **m** samples, where **m** is a small number, e.g. **m**=3 (and **m** ≤ **n**/2). As each new output value is sampled, it is compared to the <u>average of the previous **m** sample differences</u>; the difference between the average and the new sample value is equal to b_1 (**m**+1)/2+DNL, for that particular input value. For **m**=3, and gain (b_1)=1, the expected value is equal to the average plus two. Any excess error is DNL; typically ±1 LSB DNL is tolerated.
>
> Next a new average is calculated which includes the latest sample and the previous **m**-1 samples. This is repeated for all **n** samples, and typically the largest value for DNL is retained and compared to a test limit." (emphasis added.)

Applicant assumes that the Examiner relies on these teachings because of the use of the word "average". However, the referenced teachings do not mention measuring "the average voltage" of data signals having predetermined data sequences. This portion of the Sunter et al. description relates to determining differential non-linearity (DNL) and involves accumulating a predetermined number of samples (**m**) and comparing each new output value against the average of the previous **m** sample differences. There is no such step in the method of the present invention. Furthermore, Sunter et al. does not mention that the method can determine parameters of high frequency signals using only low digital or analog circuitry.

Clearly, Sunter et al. does not teach "each and every element" as set forth in claim 1 and does not show "the identical invention" in as complete detail as is contained in the claim". Therefore , Sunter et al. cannot be considered to anticipate claim 1. Claims 9 and 10 depend from claim 1 and, therefore patentably distinguish from Sunter et al. for the same reasons as claim 1.

Applicant respectfully submits that claims 1, 9 and 10 are patentable over Sunter et al. and that the application is in condition for allowance.

Respectfully Submitted,

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